ABSTRACT

ANALYSIS SERUM P1NP LEVELS ON BONE REGENERATION IN EPILEPSY PATIENS WITH LONG-TERM VALPROATE OR PHENYTOIN THERAPY

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BACKGROUND – According to WHO 2018, epilepsy affects ~50 million people worldwide. Mortality rates of epilepsy in the developing countries are reported to be higher than under developed countries. Patients with epilepsy have a risk of fractures about 2-6 times greater than general population. Valproate and phenytoin reported to be associated with decreased bone mineral density (BMD), changes in bone turnover and increased risk of fractures.

OBJECTIVE – The aim of this prospective study was to analyze serum P1NP levels as marker of bone formation in epilepsy patients who received long-term valproate or phenytoin therapy.

METHOD – The serum P1NP levels were measured on routine patient visit to ambulatory care of neurology department. Sample was collected by consecutive sampling in cross sectional study from August – September 2018. Protocol of this study had been reviewed by Ethical Committee Haji General Hospital Surabaya. P1NP were measured with ELISA and statistical analysis was analyzed by Independent T Test and Pearson correlation.

RESULT – A total of 22 patients participated in this study. The serum P1NP levels were obtained in the valproate group (mean 182.63 ± 18.24ng/ml) lower than phenytoin group (mean 451 ± 105,1ng/ml) in long term use with normal reference in healthy subject (20-480ng/ml). No correlation was found between serum P1NP levels with age, gender, height, body mass index (BMI), and duration of AED.

CONCLUSION – Patients with a history of prolonged use of valproate or phenytoin suggested for BMD testing and recommended for supplementation of calcium and vitamin D due to risk of fractures.

KEYWORDS: Epilepsy, Antiepileptic drugs, Valproate, Phenytoin, P1NP.